UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
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OFFICE OF
AIR AND RADIATION

August 3, 2000 CCD-00-10 (LDV/LDT/SV/ICI)

Dear Manufacturer:

Subject: Guidance for Certification of ORVR Vehicles and Light-Duty Trucks

This letter provides you with additional guidance on specific issues when certifying vehicles and light-duty trucks with onboard refueling vapor recovery (ORVR) systems and supplements Manufacturer Guidance Letter VPCD-98-15.

EPA and the National Highway Traffic Safety Administration have the responsibility to evaluate the safety of ORVR systems prior to certification. To facilitate our review, please discuss the following topics when demonstrating the safety of your ORVR system.

ORVR Systems with Mechanical Seals

We found that ORVR systems that use mechanical seals to prevent refueling vapors from escaping to the atmosphere present concerns that are unique to those systems. Therefore, we will check for the following when we review the safety application for a system with a mechanical seal:

- Does refueling with a partially inserted fuel nozzle result in any fuel spillage or spitback? Specifically, when the vehicle is refueled, if the aspiration port of the nozzle is on the outside of the mechanical seal and the dispensing end of the nozzle is on the inside of the seal, no fuel spitback or spillage should occur.

- Can the onboard diagnostic (OBD) pressure check take place during refueling? The OBD pressure check should not prevent refueling or result in any fuel spillage or spitback.

- Is grounding assured while refueling? Is the mechanical seal conductive? Could the nozzle be inserted without establishing electrical contact between the nozzle and the vehicle or truck?

Prior to certification, we typically require manufacturers to demonstrate the safe operation of the above items on a vehicle that is representative of production. You should contact your EPA

certification representative to arrange a suitable time and place to conduct these informal EPA refueling demonstration tests. These tests will include an attempt to refuel a vehicle using a partially inserted nozzle and an attempt to refuel the vehicle with the engine running while the OBD system performs its evaporative leak test. We may also perform other demonstration tests depending on the specific design of the mechanical seal ORVR system.

ORVR Systems with Fuel Filler Inlets That Do Not Have Spring-Biased Flapper Valves

Manufacturer Guidance Letter VPCD-98-15, Enclosure I, Item 6 (2), asks for a description of both primary and secondary paths to ground in the subject ORVR system. The primary path to ground is from the nozzle, to the refueling pump, to ground. The secondary path is from the nozzle, through the vehicle, to the vehicle ground (earth).

The secondary path requires electrical contact between the nozzle and the vehicle or truck. In many cases, manufacturers use a spring-biased flapper valve to assure electrical contact between the nozzle and the vehicle or truck.

Because the flapper valve is no longer required by EPA, some manufacturers are choosing not to use a flapper valve in fuel filler inlets. In this case, you must make clear in the ORVR application how electrical contact is assured between the nozzle and the vehicle or truck. If the ORVR system design relies on the size of the filler neck restriction to assure contact between the nozzle and the vehicle or truck, please state whether it is possible for the customer to refuel the vehicle or truck without the nozzle making electrical contact with the vehicle or truck.

ORVR Systems on Natural Gas Vehicles

In addition to the information specified in VPCD-98-15, you should provide an attestation that the vehicle is equipped with a receptacle that meets the current requirements of the ANSI/AGA NGV1 standard for refueling couplings. Also include an attestation that the compressed natural gas engine fuel system is designed and installed properly (e.g., NFPA 52.) If you find a particular question in Enclosure I not applicable to the natural gas ORVR system, you need to state so and explain why it does not apply.

ORVR Systems on Rebuilt Cars

If you rebuild and certify vehicles that have ORVR systems which were previously submitted to NHTSA and EPA for review, you still need to address all questions listed in Enclosure I of VPCD-98-15 and may not simply resubmit the same application already reviewed by NHTSA and EPA. In addition, you must describe all ORVR-pertinent modifications from the previously submitted system (e.g., tire resistivity, grounding paths, etc.)

In-Use Problems and Defects

Manufacturer Guidance Letter VPCD-98-15, Enclosure I, Item 4, asks for a list of any in-use problems or defects related to ORVR systems that required action by the manufacturer. If a

problem existed in any previous model year, include in each ORVR application a detailed list of the model year that the problem occurred, how the problem was addressed and any additional information about the resolution of the problem. Including this information in each application will help to expedite the application review process.

If you have any questions, please contact Ms. Lynn Sohacki at (734) 214-4851, Ms. Chien Sze at (734) 214-4385 or Mr. Dave Good at (734) 214-4450.

Sincerely,

Gregory A. Green, Director
Certification and Compliance Division
Office of Transportation and Air Quality

cc: Mr. Scott York, NHTSA